WHAT IS CLAIMED IS

1. A purified polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the sequence substantially as depicted in SEQ ID NO:3 or a biologically active fragment thereof.

2. The polynucleotide of Claim 1 wherein the polynucleotide sequence comprises the sequence substantially as depicted in SEQ ID NO:2.

3. An expression vector comprising the polynucleotide of Claim 1.

4. An antisense molecule comprising the complement of the polynucleotide of Claim 2 or a biologically effective portion thereof.

5. A host cell transformed with the expression vector of Claim 3.

6. A purified polypeptide comprising the amino acid sequence substantially as depicted in SEQ ID NO:3.

7. An antibody specific for the polypeptide of Claim 6.

8. A method for producing cells which express a biologically active polypeptide substantially as depicted in SEQ ID NO:3, said method comprising

   a) culturing a host cell according to Claim 5 under conditions suitable for the expression of said polypeptide.

9. A method for producing a polypeptide having the amino acid sequence substantially as depicted in SEQ ID NO:3, said method comprising the steps of:

a) culturing a host cell according to Claim 5 under conditions suitable for the expression of said polypeptide, and

b) recovering said polypeptide from the host cell culture.

10. A method of identifying compounds that modulate the biological activity of a potassium channel, comprising:

(a) combining a candidate compound modulator of biological activity with a potassium channel polypeptide having the sequence substantially as depicted in SEQ ID NO:3, and

(b) measuring an effect of the candidate compound modulator on the biological activity.

11. A method of identifying compounds that modulate the biological activity of a potassium channel comprising:

(a) combining a candidate compound modulator of a potassium channel biological activity with a host-cell expressing a potassium channel polypeptide having the sequence substantially as depicted in SEQ ID NO:3, and

(b) measuring an effect of the candidate compound modulator on the biological activity.

12. A method of identifying compounds that modulate neurophysiology, comprising:

(a) combining a candidate compound modulator of neurophysiology with a polypeptide of a potassium channel having the sequence substantially as depicted in SEQ ID NO:3, and

(b) measuring an effect of the candidate compound modulator on a biological activity of the potassium channel.

13. A method of identifying compounds that modulate neurophysiology, comprising:

(a) combining a candidate compound modulator of neurophysiology with a host-cell expressing a polypeptide of a potassium channel having the sequence substantially as depicted in SEQ ID NO:3, and

(b) measuring an effect of the candidate compound modulator on a biological activity of the potassium channel.

14. A compound that modulates the biological activity of a human potassium channel identified by the method of Claim 10.

15. A compound that modulates the biological activity of a human potassium channel identified by the method of Claim 11.

16. A compound that modulates neurophysiology identified by the method of Claim 12.

17. A compound that modulates neurophysiology identified by the method of Claim 13.

18. A pharmaceutical composition comprising a compound that modulates the biological activity of a human potassium channel according to Claim 14.

19. A pharmaceutical composition comprising a compound that modulates the biological activity of a human potassium channel according to Claim 15.

20. A pharmaceutical composition comprising a compound that modulates neurophysiology according to Claim 16.

21. A pharmaceutical composition comprising a compound that modulates neurophysiology according to Claim 17.

22. A method of treatment of a patient in need of such treatment for a condition which is mediated by the biological activity of a human potassium channel, comprising administration of a modulating compound according to Claim 14.

23. A method of treatment of a patient in need of such treatment for a condition which is mediated by the biological activity of a human potassium channel, comprising administration of a modulating compound according to Claim 15.

24. A method of treatment of a patient in need of such treatment for a condition which is mediated by neurophysiology, comprising administration of a modulating compound according to Claim 16.

25. A method of treatment of a patient in need of such treatment for a condition which is mediated by neurophysiology, comprising administration of a modulating compound according to Claim 17.

26. A method for inhibiting the expression of a potassium channel in a cell comprising administering an effective amount of an antisense molecule according to Claim 4 to said cell.

27. A method for modulating the neurophysiology of a cell comprising administering an effective amount of an antisense molecule according to Claim 4 to said cell.

28. A diagnostic composition for the identification of a polypeptide sequence comprising the amino acid sequence substantially as depicted in SEQ ID NO:3, comprising the antibody of Claim 7.

29. A diagnostic composition for the identification of a polynucleotide sequence comprising the sequence substantially as depicted in SEQ ID NO:2 or a fragment indicative thereof, comprising PCR primers derived from SEQ ID NO:1.

30. A diagnostic composition for the identification of a polynucleotide sequence comprising the sequence substantially as depicted in SEQ ID NO:4 or a fragment indicative thereof, comprising PCR primers derived from SEQ ID NO:4.